Michael Ross, Data Science, Technology, and Product Leader

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PROFILE

Analytics, data science, and technology leader with 15 years experience harnessing technology to unlock the power of data. Proven 10 year track record cultivating data-driven teams and cultures to bring innovation to the heavily regulated health care and financial sectors, including 6 years in designing and building distributed and cloud-based data products.

EMPLOYMENT HISTORY

Jan 2014 — Present

Data Science & Machine Learning, Capital One   New York, NY

Director of Data for Machine Learning, Branded Card

Data strategy lead for Card Machine Learning group. Led development of Amazon Web Services hosted data processing, availability, and governance patterns for machine learning projects, helping to drive enterprise-wide architecture and requirements for cloud data modernization. Led a cross-functional team of data scientists, analysts, and engineers in developing solutions at the intersection of enterprise data and machine learning.

- Design and prototype development of an ML feature store to support monitoring, reproducibility, and allow federated feature development with a consistent retrieval interface via GraphQL.
- Developed and integrated training data annotation services for transcription and NLP models.
- Contributed to company-wide effort for improved data security and privacy protections, pointedly for complex and untokenizable data (image, voice, unstructured text).

Director of Data Science, Branded Card

Data architecture, embedded data science, and federated development lead for Capital One's cloud-hosted, real-time transaction fraud prevention platform.

- Designed 'Lambda' and 'Kappa' architecture style decomposition of batch and real-time data processing capabilities to support highly resilient, maintainable, and fast (~15ms) credit card authorization decisioning using distributed in-memory key/value stores and Apache Spark hosted on AWS.
- Established internal open-source contribution model to support federated development by internal teams, and led international expansion (Canada) of the fraud model using this approach.
- Senior leader of a group of 10 data scientists who embedded with platform technology teams to drive cross-functional cultural exchange and improve deployability of data science models, driving best model update cadence from 6 months to 2 weeks.

Senior Data Science Manager, Data Innovation Labs

Data science and product lead for two of Capital One's NYC based Data Innovation Lab's most successful customer-impacting products, providing data-driven insights to 40+ million customers.

- Led web/mobile integration, line-of-business expansion from credit to debit cards, and internationalization (Canada) of Capital One's first 'big data' product, which provided detailed merchant information for point of sale transactions and contributed to increased online engagement and a 10 point NPS increase between 2014 and 2015. Built using custom NLP and information retrieval techniques on Hadoop and Hbase.
- Extended the merchant data solution to scale a ten-thousand customer intelligent messaging product to Capital One's full 40+ million credit card customers. This product helped drive a 12 point NPS increase for our high credit score customer segment and is now featured in national commercials.
- Directed data science and architecture decisions for the messaging product's transition from on-prem batch to cloud-hosted (AWS) real-time solution.

2009 — 2013

Director, Analytic Platforms and Technology, Anthem   Virginia Beach, VA

Developed and implemented advanced analytics, data visualization, and interactive reporting for Anthem's Health Care Analytics group.

- Leadership and hands-on development of analytics for the Provider Support Organization, delivering industry-first comprehensive medical reporting products in support of Accountable Care Organizations & Patient Centered Medical Home programs.
- Managed SAS-based predictive analytics / data mining platform and training program for a 250 person analyst & clinical statistician community.

| 2006 — 2008 | **Director of Technology, Palmetto State Pharmaceuticals** | Charleston, SC |

Senior technology leader of a pharmaceutical repackaging startup.

- Responsible for selection, development, installation, and support of administrative, financial, point of sale, industrial printing, telephony, insurance adjudication, and online sales solutions, including HL7 integration w/ provider medical records systems.
- Trained and supervised technical support and sales staff.

| 2004 — 2009 | **Founder & Consultant, Civilicity** | Charleston, SC |

Technology consulting with a focus on small non-profits and environmental law firms.

- Selection, installation, and maintenance of back-office technology.
- Website design and content management system deployments.
- Design, programming, and installation of residential and commercial automation.
- Data profiling, transformation, and migration services utilizing the Contextia platform.

| 1999 — 2004 | **Lieutenant , United States Navy** | Various |

EDUCATION

| **BS, Mathematics & Computer Science, Middle Tennessee State University** | Murfreesboro, TN |

| **MS, Computer Science (No Degree), Stanford** | Palo Alto, CA |

BACKGROUND

Skills

Industry Knowledge

- Financial Services: Visa/Mastercard networks, merchant information, credit risk, fraud
- Healthcare: financial and clinical reporting and predictive analytics, ICD-9/10, HL7, lab data, billing, HIPAA
- Enterprise data management, master data management, data quality, data modeling

Leadership

- Product management in high-collaboration, matrixed environments
- Direct leadership of teams and 15-20 person organizations, partnership-based leadership of 50-100 person organizations
- Project management and Agile development methods (certified)
- Coaching and mentorship of introverts and other minority voices
- Strategy

Technology

- Enterprise on-prem and cloud architecture (AWS)
- Vendor data solutions: SAS, Teradata, Cloudera, Microsoft (MS-SQL, SSIS, SSAS, SSRS)
- Open-source: Hadoop, Spark, Kubernetes, Kafka, Hive, HBase, Hazelcast, Elasticsearch
- Programming: Python (scientific computing stack), Octave/Matlab, SQL, Java

Mission and Service Oriented

- Demonstrated bias for organizations with noble goals and enviable social mandates, such as "Helping those who need help the most" (Amerigroup - Medicaid/Medicare only health insurance company), "Changing banking for good" (Capital One), and "Country above self" (US Navy).
- Current obsessions include: the use of AI and data science in mitigating impacts from climate change and increasing societal resiliency; renewable energy; informed democracy in the age of disinformation and echo chambers; differential privacy, homomorphic encryption, and other techniques to harness data while maintaining privacy.